Site: Ham: II Transfer ID#M0 N009855669
Break: 1. 1
Other:
1-14-91

TRIP REPORT ON SITE CHARACTERIZATION SAMPLING
HAMILL TRANSFER COMPANY SITE

ST. LOUIS, MISSOURI

January 14, 1991

Mike Michalowski

Emergency Planning And Response Branch Environmental Services Division EPA VII

> 30344348 Superfund

#### TRIP REPORT ON SITE CHARACTERIZATION SAMPLING

# HAMILL TRANSFER COMPANY SITE ST. LOUIS, MISSOURI Mike Michalowski, OSC

January 14, 1991

#### I. BACKGROUND

# A. Site Description

The Hamill Transfer Company site occupies 3.13 acres of land in city blocks 2234 East and West, 2233 East and West, and 2231 of St. Louis, Missouri (Figure 1). The mailing address is 900 Virginia Avenue, St. Louis, Missouri 63103. Virginia Avenue is now closed, and 3225 Chouteau Avenue is an alternate address.

The Hamill Transfer Company site is a family-owned and operated trucking business located within the central downtown area of the City of St. Louis. This a mixed commercial/residential area. This site is bounded on the south by numerous multi-family dwellings; on the north by the Terminal Railway Association's railroad yard; and on the east and west by commercial structures. The site occurs within a highly urbanized area with several hospitals and schools located within one-half mile.

Hamill Transfer Company is an actively operating facility with many old trucks and trailers parked on the surface of the site. The site occupies 3.13 acres with the width of the lot being 175 feet. A building, 175 feet by 100 feet, divides the property into approximately equal north and south sections. The building includes an office/shop area and three truck bays. There is also a quonset hut, approximately 70 feet by 140 feet, occupying the northeast corner.

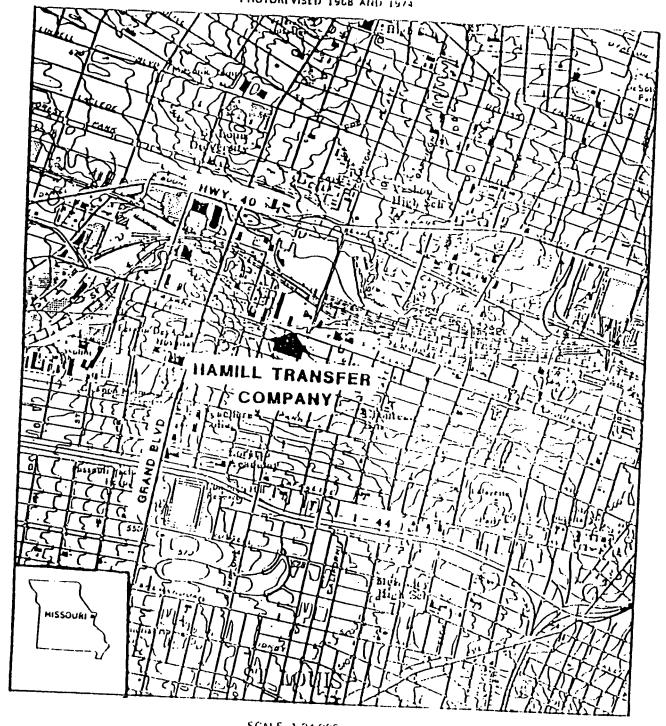
The site is paved with a hot tar and gravel mix (approximately three inches) overlaying a soil and crushed stone base. Potholes are routinely filled with gravel.

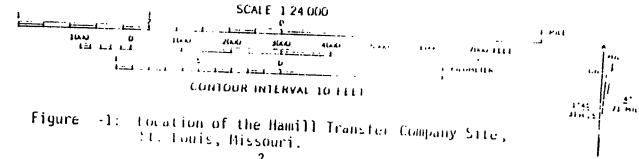
### B. Site History

Documents reviewed by Environmental Protection Agency (EPA) officials in March 1982, indicated that Hamill Transfer and several other St. Louis trucking firms had their lots sprayed with waste oil in the 1970s as a means of dust control. Company records indicate receipt of 8,000 gallons of waste oil from the Bliss Waste Oil Service on May 27, 1972.

# GRANTE CITY, ILI. MO. CAHOKIA, ILL.- MO

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EPA and Missouri Department of Natural Resources (MDNR) officials interviewed a former Bliss employee, David Covert, on April 21, 1983. Mr. Covert said he had oiled the Hamill Transfer site and that another employee, Gary Lambarth, had also oiled the site. Therefore, the site may have been oiled more than once.

David Wilcox, EPA, conducted a preliminary investigation at the Hamill Transfer site on November 30, 1982. Follow-up screening samples were collected by EPA, EPA contractors, and MDNR personnel on December 6 and 7, 1982. Nine composite soil and sediment samples and two vapor monitor badge samples were collected from the alleged affected area of 2.81 acres. A maximum value of 15.6 parts per billion (ppb) dioxin was determined in these screening samples.

Additional sampling was conducted by EPA March 3-5, 1983. Up to 155 ppb dioxin were detected in one of 174 samples. Samples were collected at 40-foot intervals at varying depths of 6-, 12-, 24- and 36-inches through the thin asphalt pavement. Dioxin was detected at 4 ppb in an off-site sediment sample taken from a surface stormwater gutter near the intersection of Compton and Chouteau Avenues (Figure 2).

#### II. FIELD ACTIVITIES

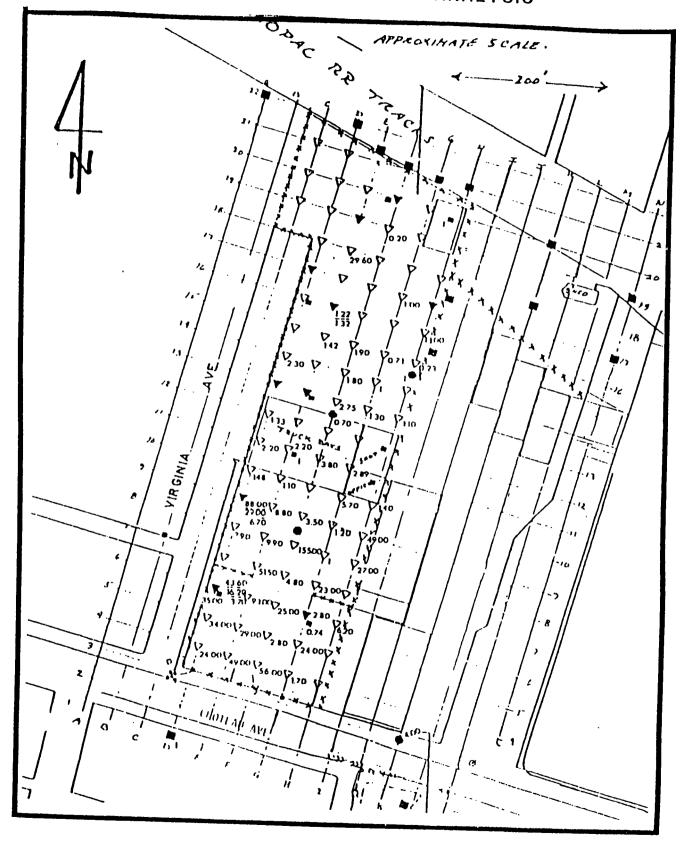
# A. Objectives and Scope of Field Work

The exposure threat at the Hamill Transfer Company site has been categorized as occupational/industrial by EPA. The site is presently covered by an asphalt and gravel cap. An action level of 20 ppb in soil under the cap has been proposed for this site. Correspondence on health consultations with the Agency for Toxic Substances and Disease Registry (ATSDR) which provides supporting information regarding the proposed action level are included in Attachment I.

The objective of the follow-up sampling activity was to determine which, if any, areas of the site contain an average concentration of dioxin above the 20 ppb action level at a 95 percent level of confidence (UCL).

The investigation was designed to provide the information needed to determine whether or not a Superfund response action would be warranted at this time. If it is determined that a removal action is necessary, the statistically derived data will be used to estimate the volume of contaminated soil which will have to be removed to meet health authority recommendations for future safe use of the property.

Figure 2: March 1983 TCDD ANALYSIS



Hamill Transfer Company St. Louis, Missouri

# B. Investigation Activities

- 1. Investigation Personnel
  - a. Sample Team (5/31-6/8/90)

Mike Michalowski, EP&R Ed Martin, TAT Dave McClellan, RES John Vrenick, RES Steve Hite, RES Bob Sims, RES

b. Surveying Team (7/16-17/90)

Dan Harris, EP&R Reta Roe, EP&R Mike Michalowski, EP&R

#### 2. Field Activities

Mr. John A. Hamill, President, Hamilcar Properties, Inc., provided EPA with written access on May 22, 1990, to perform the necessary field work. No objections to the proposed work were made.

Sampling activity was initiated on May 31, 1990, after the on-scene coordinator (OSC) and Technical Assistance Team (TAT) sectioned the site into 22 sampling grids measuring approximately 4,700 square feet each in area. The corners of the sampling grids were staked and will be surveyed in for future reference by the Emergency Planning and Response (EP&R) Branch at a later date. The sampling team consisted of an OSC/Team Leader, a TAT member responsible for site documentation and sample control, a Riedel Environmental Servies (RES) Response Manager who supervised the labor crew, and three RES laborers who performed the drilling and sampling work.

RES responded to the site on June 1, 1990, with a General 550 "Dig-R-Mobile" portable drill rig equipped with a 2-inch diameter auger. Sampling proceeded at approximately 1300 after sample procedures were explained to RES and equipment setup was completed.

The site is approximately 3.13 acres in size. Excluding those areas occupied by buildings and other obstructions, approximately 2.37 acres (103,500 sq. ft.) was accessible for sampling. The entire site (excluding areas occupied by buildings, debris, junked cars and trucks, and a quonset hut) was sectioned into 22 sample grids with each containing approximately 4,700 square feet. Each sample grid measured 56 feet by 84 feet

(Figure 1). The sampling grids were further divided into six equal-sized (28 feet by 28 feet) sampling cells. Within each sample cell two 2-inch diameter borehole samples were collected from 0 to 6 inches and 0 to 18 inches. Whenever possible, the boreholes were located in the center of the cell and were approximately one foot apart.

The samples were collected as single-aliquot auger cuttings and consisted of the entire contents of the 2-inch borehole, including dirt, rock, and asphalt. The 0- to 6-inch sample approximated 19 cubic inches in volume. The 0- to 18-inch sample approximated 57 cubic inches in volume. Both samples were transferred whole to a plastic poultry bag-lined one-quart paint can for shipment to the laboratory. Stainless-steel putty knives were used to transfer the auger cuttings to the paint cans.

For every 24 samples collected, one field replicate, one field blank, one matrix spike, and one audit sample were included for quality assurance control. The field replicate represented a third borehole sample collected within a sample cell. The other quality assurance control samples were provided by the EPA/Region VII Laboratory to the contract laboratory.

Two auger bits were used at each sample cell to obtain the two borehole samples. One auger bit was used to drill the 6-inch deep borehole within the sample grid while the other auger bit was used to drill the 18-inch deep borehole. The auger, both auger bits, and putty knife were decontaminated between sample cells using a detergent and water solution followed by a methanol and clean-water rinse. The rinsate was collected and stored in two new 55-gallon close-top drums which remained onsite pending the receipt of sample results which, in turn, will determine a disposal means.

The auger holes were filled to within three inches of the surface with clean, dry sand and the hole was patched with asphalt sealant compacted in place with a two-pound hammer.

Standard field documentation, including sample tags, sample Field Sheets, and Chain-of-Custody procedures were followed.

All sampling personnel wore level C personal protective equipment including impermeable gloves, one-piece impermeable disposable coverallos, rubber boots, and a full-face, air-purifying respirator with appropriate high-efficiency particulate filter.

No sampling was done on June 7 or on the morning of June 8 due to heavy thundershowers and tornado warnings. Sampling activities were completed by early afternoon June 8, 1990.

A total of 240 samples were obtained during the course of the sampling effort which included 229 section samples, 10 replicate samples, and one background sample. All samples collected were processed at the E&E/TAT Office in St. Louis and then shipped to the TMS Analytical Laboratory, a contract laboratory, in Indianapolis, Indiana, for dioxin analysis.

Site surveying was initiated by EP&R on the morning of July 16, 1990, and completed on July 17, 1990. The site property boundaries and prominent features/structures were surveyed. The site was then gridded into 22 sampling grids approximately 4,700 square feet in area. The corners of the sampling grids were staked and surveyed for future reference.

On July 17, 1990, after the sample results showed that dioxin contamination existed above the action levels, the contents of the two drums of decontamination water were assumed to be contaminated at low levels. As a result, the determination was made to slowly release the drum contents into section 1, which is one of the contaminated, unpaved sections surface.

#### III. ANALYTICAL RESULTS

Analysis was performed on material which passed a three-eighths-inch sieve. The concentration was determined based on the total weight of the unsieved sample. Analytical procedures were performed in accordance with the Special Analytical Services (SAS) Contract #68-D9-01-0135, SAS 5190G, dated January 30, 1990, using the Statement of Work entitled, "Rapid Turnaround Dioxin Sample Analysis, Multi-Media," as revised February 1988. The quality of analytical data was verified by the Regional laboratory in accordance with the Regional Quality Assurance/Quality Control procedures.

Table I summarizes the analytical results.

Due to interferences introduced by asphalt materials in the samples, the laboratory was unable to analyze a total of 19 samples as noted by the "invalidated" notation in the Laboratory Data Transmittal (Attachment II).

Table II summarizes the 95 percent UCL concentrations for the sections. The 95 percent UCL calculations are included in the TAT Report (Attachment III). Figure 3 is a site map showing the 95 percent UCL values for the 0- to 6-inch and 0- to 18-inch depths. A larger-scaled survey map, including sample locations and data results is included as Attachment IV.

Figure 3: 95% UCL TCDD LEVELS (ppb)

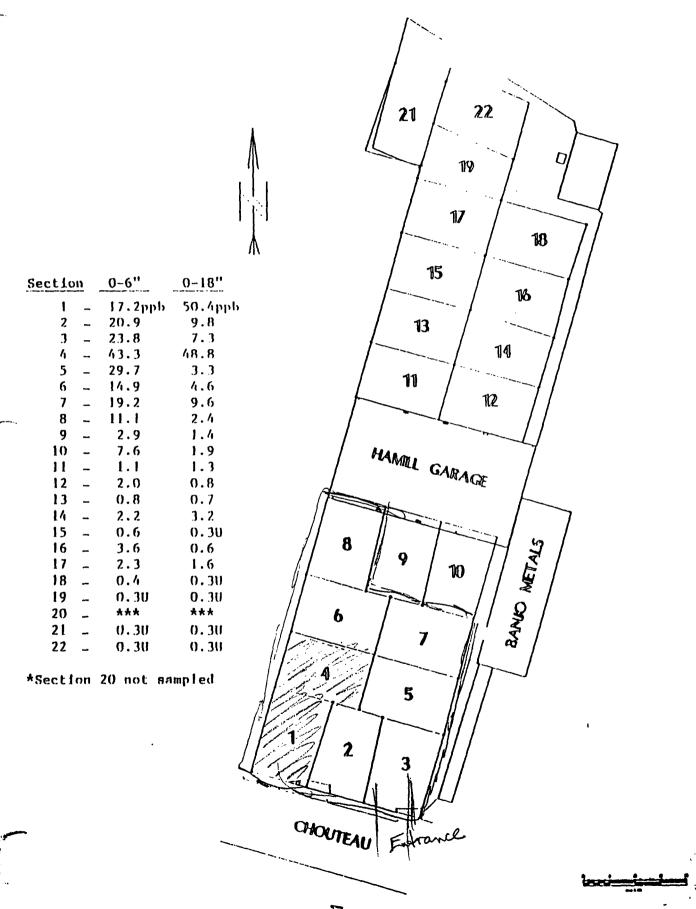


TABLE 1
SUMMARY OF ANALYTICAL DATA

Hamill Transfer Company St. Louis, Missouri

(CVX66)		ROW/COL		DEPTH (in.)	TCDD CONC. (ng/gm)
001	1	A-1		6	6.939
002	1	A-1		18	6.783
003	1	B-1		6	9.301
004	1	B-1		18	23.421
005	1	A-2		6	22.182
006	1	A-2		18	85.269
007	1	B-2		6	12.270
800	1	B-2		18	9.574
009	1	A-3		6	6.074
010	1	A-3		18	13.032
011	1	B-3		6	16.040
012	1	B-3		18	18.315
		Section 1:	0-6"	95% UCL	= 17.20
			0-18"	95% UCL	= 50.40
013	2	A-1	7	6	3.670
014	2	A-1		18	6.643
015	2	A-2		6	1.643
016	2	A-2		18	.936
017	2	A-3		6	18.015
018	2	A-3		18	6.096
019	2	B-1		6	2.361
020	2	B-1		18	1.263
021	2	B-2		18	12.095
022	2	B-3		6	11.927
023	2	B-3		18	4.789U
	icate 2	B-3		18	4.934
*025	*	***		**	N/A
049	2	B-2		6	37.290

Section 2: 0-6" 95% UCL = 20.90 0-18" 95% UCL = 9.80

<sup>\*</sup> Sample number #025 was inadvertently ommitted and was not used

TABLE 1 (Con't)

SAMPLE # (CVX66)	SECTION #	ROW/COLUMN	DEPTH (in.)	TCDD CONC. (ng/gm)
026	3	A-1	6	46.090
027	3	A-1	18	11.364
028	3	A-2	6	2.392
029	3	A-2	18	.527
030	3	A-3	6	.343
031	3	A-3	18	.300U
032	3	B-1	6	1.231
033	3	B-1 '	18	.639
034	3	B-2	6	.471
035	3	B-2	18	.300Ŭ
036	3	B-3	6	2.242
*037	3	B-3	18	N/A

Section 3: 0-6" 95% UCL = 23.80 0-18" 95% UCL = 7.30

<sup>\*</sup> Sample #037 could not be obtained due to subsurface obstructions

038	4	A-1	6	44.327
039	4	A-1	18	56.686
040	4	B-1	6	54.717
041	4	B-1	18	11.021
042	4	C-1	6	3.255
043	4	C-1	18	4.6740
044	4	B-2	6	30.247
045	4	B-2	18	3.496
046	4	C-2	6	18.251
047	4	C-2	18	4.295
048 Duplicate	4	C-2	6	11.595

Section 4: 0-6" 95% UCL = 43.30 0-18" 95% UCL = 48.80

050	5	A-1	6	38.252
051	5	A-1	18	2.329
052	5	B-1	6	23.953
053	5	B-1	18	4.366
054	5	C-1	6	1.917
055	5	C-1	18	.300U
056	5	B-2	6	4.902
057	5	B-2	18	1.291
058	5	C-2	6	.300U
059	5	C-2	18	.540

Section 5: 0-6" 95% UCL = 29.70 0-18" 95% UCL = 3.30

Table 1 (Con't)

	SECTION #	ROW/COLUM	N DEPTH	TCDD CONC.
(CVX66)			(in.)	(ng/gm)
060	6	A-1	6	20.703
061	6	A-1	18	.825
062	6	B-1	6	2.308
063	6	B-1	18	.553
064	6	C-1	6	4.674
065	6	C-1	18	5.846
066	6	A-2	6	7.823
067	6	A-2	18	3.299
068	6	C-2	6	10.184
069	6	C-2	18	2.221
070 Duplica	te 6	C-2	6	11.747
		Section 6:	0-6" 95% UCL	= 14.90
			0-18" 95% UCL	= 4.60
071	8	A-1	6	.643
072	8	A-1	18	.3001
073	8	B-1	6	2.499
074	8	B-1	18	.801
075	8	B-2	6	12.403
076	8	B-2	18	2.699
077	8	B-3	6	.803
078	8	B-3	18	.3000
079 Duplica	te 8	B-3	6	11.369
		Section 8:	0-6" 95% UCL	= 11.10
			0-18" 95% UCL	= 2.40
080	7	A-1	6	8.639
081	7	A-1	18	7.522
082	7	B-1	6	1.939
083	7	B-1	18	4.3730
084	7	A-2	6	4.157
085	7	A-2	18	1.972
086	7	B-2	6	4.6540
087	7	B-2	18	.4470
088	7	C-2	6	21.333
089	7	C-2	18	4.7090
		Section 7:	0-6" 95% UCL	= 19.20
			0-18" 95% UCL	= 9.60

TABLE 1 (Con't)

SAMPLE #	SECTION	3 ROW/COLU	MN DEPTH	TCDD CONC.
(CVX66)		,	(in.)	(ng/gm)
090	9	7 1	6	1 772
091		A-1		1.773
	9	A-1	18	1.047
092	9	B-1	6	4.645U
093	9	B-1	18	.391U
094	9	A-2	6	1.870
095	9	A-2	18	1.372
096	9	B-2	6	3.894U
097	9	B-2	18	3.189U
098	9	B-3	6	2.800
099	9	B-3	18	.300U
100	9	B-3	6	.300U
101	9	B-3	18	3.632U
		Section 9:	0-6" 95% UCL	= 2.90
			0-18" 95% UCL	= 1.40
102	10	A-1	6	4.899U
103	10	A-1	18	.454
	icate 10	A-1	18	.565
104 Dupii	10	A-2	6	2.921U
106	10			
		A-2	18	.380U
107	10	A-3	6	1.189
108	10	A-3	18	.314U
109	10	B-1	6	.3000
110	10	B-1	18	.508
111	10	B-2	6	8.814
112	10	B-2	18	3.662
113	10	B-3	6	1.958
114	10	B-3	18	.976
		Section 10:	0-6" 95% UCL	= 7.60
			0-18" 95% UCL	= 1.90
115	11	A-1	6	.300U
116	11	A-1	18	.3000
117	11	B-1	6	.392U
118	11	B-1	18	.300U
119	11	C-1	6	4.866U
120	11	C-1		
121			18	1.215
	11	A-2	18	1.527
122	11	B-2	6	.3000
123	11	B-2	18	.300U
124	11	C-2	6	.300U
125	11	C-2	18	3.942U
126	11	A-2	6	1.482
		Section 11:	0-6" 95% UCL	= 1.10
			0-18" 95% UCL	= 1.30

TABLE 1 (Con't)

SAMPLE #	SECTION	# ROW/COLU	MN DEPTH	TCDD	CONC.
(CVX66)		·	(in.)	(ng	/gm)
127	12	A-1	6		.741
128	12	A-1	18		4.951U
129	12	B-1	6		2.629
130	12	B-1	18		2.059U
131	12	A-2	6		.512
132	12	A-2	18		.3000
133	12	B-2	6		.325
134	12	B-2	18		.383
135	12	C-2	6		1.228
136	12	C-2	18		.484
130 137 Dupl		C-2	18		.810
10, 5451.	10000 10		10		.010
		Section 12:	0-6" 95% UCL		2.00
			0-18" 95% UCL	=	0.80
138	13	A-1	6		.594
139	13	A-1	18		.496
140	13	B-1	6		.680
141	13	B-1	18		.482
142	13	C-1	6		.790
143	13	C-1	18		.815
144	13	A-2	6		.300U
145	13	A-2	18		.330
146	13	B-2	6		.849
147	13	B-2	18		.785
148	13	C-2	6		.663
149	13	C-2	18		.300U
		0 h i 10 -	0.64 0.59 7707		0 00
		Section 13:	0-6" 95% UCL		0.80
			0-18" 95% UCL	=	0.70
150	14	A-1	6		1.796
151	14	A-1	18		2.521
152	14	B-1	6		2.527
153	14	B-1	18		5.034U
154	14	A-2	6		.300U
155	14	A-2	18		.300U
156	14	B-2	18		.663U
157	14	B-2	6		1.325
158 Dupl	icate 14	B-2	6		.913
		Section 14:	0-6" 95% UCL	=	2.20
			0-18" 95% UCL	=	3.20

TABLE 1 (Con't)

SAMPLE # (CVX66)	SECTION #	ROW/COLUM	N DEPTH (in.)	TCDD CONC.
159	15	A-1	6	.300U
160	15	A-1	18	.3000
161	15	B-1	6	.688
162	15	B-1	18	.3000
163	15	C-1	. 6	.3000
164	15	C-1	18	.3000
165	15	A-2	6	.300U
166	15	A-2	18	.300U
167	15	B-2	6	.709
168	15	B-2	18	.342
169	15	C-2	6	.3000
- 170	15	C-2	18	.300U
	S	Section 15:	0-6" 95% UCL	= 0.60
			0-18" 95% UCL	= 0.30U
172	16	A-1	6	.300U
173	16	A-1	18	.3000
174	16	B-1	6	.511
175	16	B-1	18	.306
176	16	C-1	6	1.074
177	16	C-1	18	.868
178 Dupli		C-1	18	.360U
179	16	A-2	6	.300U
180	16	A-2	18	.300U
181	16	B-2	6	.480
182	16	B-2	18	.300U
183	16	C-2	6	6.526
184	16	C-2	18	4.293U
		Section 16:	0-6" 95% UCL	
			0-18" 95% UCL	= 0.60
185	•	A-1	6	.300U
186	17	A-1	18	.300U
187	17	B-1	6	2.991
188	17	B-1	18	.300U
189	17	C-1	6	.754
190	17	C-1	18	.300U
191	17	A-2	6	.3000
192	17	A-2	18	.336U
193	17	B-2	6	11.576U
194	17	B-2	18	2.541
195	17	C-2	6	1.828
196	17	C-2	18	.746
		Section 17:	0-6" 95% UCL	= 2.30
			0-18" 95% UCL	= 1.60

TABLE 1 (Con't)

SAMPLE #	SECTION #	ROW/COLUMN	N DEPTH	TCDD CONC.
(CVX66)			(in.)	(ng/gm)
197	18	A-1	6	.367U
198	18	A-1	18	.300U
199	18	B-1	6	.374U
200	18	B-1	18	.3000
201	18	C-1	6	3.908U
202	18	C-1	18	.300U
203	18	A-2	6	.300U
204	18	A-2	18	.300U
205	18	B-2	18	.300U
206	18	B-2	6	.300U
207	18	C-2	6	.300U
208	18	C-2	18	.300U
209 Dupli	cate 18	C-2	6	.300U
		Section 18:	0.61.058.1101	0.40
		section 18:	0-6" 95% UCL	= 0.40
			0-18" 95% UCL	= 0.30U
210	19	A-1	6	.300U
211	19	A-1	18	.300U
212	19	A-2	6	.300U
213	19	A-2	18	.300U
214	19	B-1	6	.300U
215	19	B-1	18	.300U
216	19	B-2	6	.300U
217	19	B-2	18	.300U
		Section 19:	0-6" 95% UCL	= .300U
			0-18" 95% UCL	= .300U
218	21	A-1	6	.300U
219	21	A-1	18	.3000
220	21	A-2	6	.3000
221	21	A-2	18	.3000
222	21	A-3	6	.3000
223	21		•	
224	21	A-3 B-1	18 6	.3000
225	21	B-1 B-1		.300U
			18	.300U
226	21	B-2	6	.3000
227	21	B-2	18	.3000
228	21	B-3	6	.3000
229	21	B-3	18	3.6360
•		Section 21:	0-6" 95% UCL	= .300U
			0-18" 95% UCL	= .3000
				,3000

TABLE 1 (Con't)

SAMPLE # (CVX66)	SECTION #	ROW/COLUMN	DEPTH (in.)	TCDD CONC. (ng/gm)
230	22	A-1	6	.300U
231	22	A-1	18	.300U
232	22	A-2	6	.300U
233	22	A-2	18	.300U
234	22	B-1	6	.300U
235	22	B-1	18	.300U
236	22	B-2	6	.300U
237	22	B-2	18	.300U
238	22	C-1	6	.300U
239	22	C-1	18	.300U
240	22	C-2	6	.300U
241	22	C-2	18	.300U
242 Dupli	cate 22	C-2	18	.300U

Section 22: 0-6" 95% UCL = .300U 0-18" 95% UCL = .300U

	TABLE II	
SUMMARY OF 9	5% CONCENTRATIONS	BY SECTION
95% UCL CONCENTRATION	TOTAL SECTIONS	SECTION NUMBER
10-20 ppb @ 0-6" @ 0-18"	8 0	1,2,3,4,5,6,7,8
> 20* ppb @ 0-6" @ 0-18"	4 2	2,3,4,5 1,4

<sup>\*</sup> The highest 95% UCL concentration was 50.4 ppb detected in Section 1, 0 - 18 inch depth

# IV. SUMMARY/RECOMMENDATIONS

The data indicates that the concentration of dioxin in the soil from some auger holes exceeded the proposed action level of 20 ppb. Wide variations in dioxin concentrations were observed at both depths (0 to 6 inches and 0 to 18 inches). At the 0- to 6-inch depth, concentrations ranged from nondetectable, at a detection limit of 0.3 ppb (0.3U), to 46.09 ppb. 0- to 18-inch depth, concentrations ranged from nondetectable (0.3U) to 85.27 ppb (see Data Transmittal Package attachment for the detailed section analysis). Only two sections at the 0- to 18-inch depth samples showed significantly higher concentrations than the shallower 0- to 6-inch samples. The average concentrations at the 95 percent UCL for the 0- to 6-inch and 0- to 18-inch depth intervals for all sections were calculated. The 95 percent UCL concentrations ranged from 0.300 ppb to 43.3 ppb at the 0- to 6-inch depth and from 0.300 ppb to 50.4 ppb at the 0- to 18-inch depth.

As the site map indicates, there are wide variations in contaminant concentrations across the site, within sample sections, and between depth samples collected one foot apart.

The southern-most sections of the Hamill property (sections 1, 2, 3, 4, and 5) is the area which likely presents the greatest exposure risk. Significant contaminant concentrations were found in sections 1 and 4 located in the southwest corner of the parking lot. Concentrations up to 85.27 ppb were detected in section 4. The other sections with elevated concentrations (sections 1, 2, 3, and 5) are generally used for temporary trailer parking but remain accessible to the Hamill employee and customer parking. Sections 1, 2, and 3 are adjacent to the Chouteau Avenue sidewalk

The Agency for Toxic Substances and Disease Registry (ATSDR) should review the data and provide EPA with an updated Health Consultation for this site. Based on the findings and recommendations of the ATSDR Health Consultation, EPA should assess the need and scope of further remedial action.